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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|-----------------------|------------------|
| 10/707,048 | 11/18/2003 | Jianfeng Chen | LSH-0002 | 1047 |
| 26868 | 7590 | 06/30/2006 | EXAMINER | |
| HASSE & NESBITT LLC 7550 CENTRAL PARK BLVD. MASON, OH 45040 | | | ANTHONY, JOSEPH DAVID | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1714 | |

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/707,048 | Applicant(s) CHEN ET AL. | |
| | Examiner Joseph D. Anthony | Art Unit 1714 | |

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
 4a) Of the above claim(s) 10-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 and 24-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/18/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-9 and 24-30, drawn to ultrafine modified $\text{Al}(\text{OH})_3$ and fire retardant product that comprise ultrafine modified $\text{Al}(\text{OH})_3$, classified in class 252 subclass 604.
 - II. Claims 10-23, drawn to methods of preparing ultrafine modified $\text{Al}(\text{OH})_3$, classified in class 423, subclass 630.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by grounding $\text{Al}(\text{OH})_3$ to the point where it meets applicant's claimed diffractions peaks.
3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Daniel F. Nesbitt on 04/11/06 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-9 and 24-30. Affirmation of this election must be made by applicant in replying to this Office action. Claims 10-23 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1-9 and 24-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Independent claim 1 is indefinite for a number of reasons: 1) the word "peaksby" should be the two words --peak by--. 2) The word --angles--needs to be inserted directly after the number "20" in line 3 of the claim., and 3) the component: "untrafine modified Al(OH)₃ having diffraction peaksby XRD spectrum" is totally indefinite. What does "XRD" stand for? What does applicant mean by the word "modified" in regards to

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“untrafine modified $\text{Al}(\text{OH})_3$? How is untrafine $\text{Al}(\text{OH})_3$ modified? NOTE: Because of this serious indefiniteness issue, for the following prior-art rejections any prior-art that teaches untrafine $\text{Al}(\text{OH})_3$ that is modified in some way either physically and/or chemically will be considered to meet the limitations of applicant’s modified $\text{Al}(\text{OH})_3$.

In claim 2, line 2, the word –angles—needs to be inserted directly after the number “20”.

Independent claim 26 is also indefinite for a basically the same reasons independent claim 1 is indefinite.

Claims 3-9 and 24-25 and 27-30 are rejected here because they are dependent on rejected base claims.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-9 and 24-30 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Armbrust et al. U.S. Patent Number 3,268,295 or Wall U.S. Patent Number 2,549,549 or Sato et al. U.S. Patent Number 3,839,536 or Trebillon U.S. Patent Number 4,492,682 or English Language Patent Abstract Of Japan Publication Number: 62-235210 or Musselman et al. U.S. Patent Number 5,480,587.

Armbrust et al., Wall, Sato et al., Trebillon, and JP Abstract all teach the production of untrafine $\text{Al}(\text{OH})_3$ by introducing carbon dioxide gas into a sodium aluminate solution under pressure, which encompasses applicant's disclosed high gravity rotating bed apparatus, to form a gel or gel-like suspension of untrafine modified $\text{Al}(\text{OH})_3$, that can subsequently be filtered and dried and then subjected to other process steps if desired, see abstract and claims of each reference. Applicant's claimed untrafine modified $\text{Al}(\text{OH})_3$, and the fire retardant product containing them, are thus deemed to be anticipated over the individual disclosures of these references. In the alternative, applicant's claims may differ from applicant's claimed invention in that it is unclear if the untrafine modified $\text{Al}(\text{OH})_3$ as taught by the applied prior-art references, actually meet applicant's claimed diffraction Peaks by XRA spectrum at the locations of the listed D values and 20 Angles, since said XRA spectrum data is not directly disclosed by the applied prior-art references. In any case, applicant's claims are deemed to be obvious over the individually applied prior-art references because the references teach the same basic method of making untrafine modified $\text{Al}(\text{OH})_3$ that

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applicant discloses, and thus it would be well within the skill of the artisan having ordinary skill in the art to make untrafine modified $\text{Al}(\text{OH})_3$ that are within applicant's claimed parameters if such is desired. Furthermore, applicant has set forth no showing of any superior and unexpected results that may or may not be present when untrafine modified $\text{Al}(\text{OH})_3$ has applicant's particularly claimed XRA Spectrum.

Musselman et al. directly teaches the use of untrafine modified $\text{Al}(\text{OH})_3$, as fire retardant additives for polymers. The taught untrafine modified $\text{Al}(\text{OH})_3$, additives are deemed to anticipated applicant's claimed untrafine modified $\text{Al}(\text{OH})_3$, see abstract, Figs. 3-5, column 4, lines 22-31 and column 5, lines 25-60. In the alternative, applicant's claims may differ from applicant's claimed invention in that it is unclear if the untrafine modified $\text{Al}(\text{OH})_3$ as taught by the Musselman et al., actually meet applicant's claimed diffraction Peaks by XRA spectrum at the locations of the listed D values and 20 Angles, since said XRA spectrum data is not directly disclosed by Musselman et al.. In any case, applicant's claims are deemed to be obvious over Musselman et al.. Furthermore, applicant has set forth no showing of any superior and unexpected results that may or may not be present when untrafine modified $\text{Al}(\text{OH})_3$ has applicant's particularly claimed XRA Spectrum.

12. Claims 1-9 and 24-30 are rejected under 35 U.S.C. 102(**a or b**) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the English Language Abstract of CN1258639A. NOTE: This rejection is made under 35 U.S.C. 102(**a or b**) **because applicant neither filed a copy of PCT/CN01/00810 05/18/2001 nor did**

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applicant submit an English Language translation of this priority document which applicant's pending application is a CIP of. As such, the examiner does know what the actual effective filing date should be for applicant's pending claims.

The English Language Abstract of CN1258639A teaches the production of untrafine $\text{Al}(\text{OH})_3$ by introducing carbon dioxide gas into a sodium aluminate solution under ultragravity conditions, such as a rotating bed apparatus, to form a gel or gel-like suspension of untrafine modified $\text{Al}(\text{OH})_3$, that can subsequently be filtered and dried and then subjected to other process steps if desired, see abstract and claims of each reference. Applicant's claimed untrafine modified $\text{Al}(\text{OH})_3$, and the fire retardant product containing them, are thus deemed to be anticipated over the CN Abstract. In the alternative, applicant's claims may differ from applicant's claimed invention in that it is unclear if the untrafine modified $\text{Al}(\text{OH})_3$ as taught by the CN Abstract, actually meets applicant's claimed diffraction Peaks by XRA spectrum at the locations of the listed D values and 20 Angles, since said XRA spectrum data is not directly disclosed by the CN Abstract. In any case, applicant's claims are deemed to be obvious over the CN Abstract because the reference teaches the same basic method of making untrafine modified $\text{Al}(\text{OH})_3$ that applicant discloses, and thus it would be well within the skill of the artisan having ordinary skill in the art to make untrafine modified $\text{Al}(\text{OH})_3$ that are within applicant's claimed parameters if such is desired. Furthermore, applicant has set forth no showing of any superior and unexpected results that may or may not be present when untrafine modified $\text{Al}(\text{OH})_3$ has applicant's particularly claimed XRA Spectrum.

NOTE: this rejection is made

Prior-Art Cited But Not Applied

13. Any prior-art reference which is cited on FORM PTO-892 but not applied, is cited only to show the general state of the prior-art at the time of applicant's invention.

Examiner Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Joseph D. Anthony whose telephone number is (571) 272-1117. If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (571) 272-1119. The centralized FAX machine number is (571) 273-8300. All other papers received by FAX will be treated as Official communications and cannot be immediately handled by the Examiner.



Joseph D. Anthony
Primary Patent Examiner
Art Unit 1714

6/26/06